AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claims 1-22 (Cancelled).

23. (Currently Amended) A powder processing method comprising the steps of:

~~effecting a mechanical treatment on processing target powder for the activation thereof by applying a mechanical force thereto; and~~

effecting an excitement treatment on ~~the~~ processing target powder ~~during the mechanical treatment~~ for providing an excitation energy to the processing target powder by discharge plasma while effecting a mechanical treatment on the processing target powder for the activation thereof by applying a compressive force and a shearing force thereto as mechanical forces.

24. (Currently Amended) The powder processing method according to claim 23, ~~further comprising the step of effecting~~ wherein the mechanical treatment involves a milling treatment for milling the processing target powder ~~by applying a compressive force and a shearing force thereto~~.

25. (Cancelled).

26. (Original) The powder processing method according to claim 23, wherein during the mechanical treatment and the excitement treatment, another substance is caused to come into contact with the processing target powder, so that the another substance is compounded with the processing target powder to obtain a compound powder.

27. (Original) The powder processing method according to claim 26, wherein said processing target powder includes titanium oxide powder and the another substance includes a nitrogen element.

28. (Original) The powder processing method according to claim 27, wherein during the mechanical treatment and the excitement treatment, nitrogen gas or a nitrogen compound is supplied to the titanium oxide powder, so as to contact the nitrogen element with the titanium oxide powder, so that the nitrogen-containing titanium oxide powder is manufactured as the compound powder.

29. (Original) The powder processing method according to claim 26, further comprising the step of effecting a heat treatment for heating the compound powder to a range of temperature higher than or equal to its recrystallization temperature and lower than or equal to its critical temperature; and

cooling the compound powder to a room temperature.

30. (Withdrawn) A powder processing apparatus comprising:

an accumulating face on which the processing target powder is to be accumulated;

a processing face disposed substantially opposite to the accumulating face and convexly curved;

moving means for moving the accumulating face and the processing face relative to each other along the accumulating face, wherein as the processing face is moved along the accumulating face, a compressive force and a shearing force are applied to the processing target powder at a gap between the accumulating face and the processing face, whereby the processing target powder is milled; and

excitement treatment means configured to apply an excitation energy to the processing target powder accumulated on the accumulating face from an excitation energy supplying portion disposed substantially opposite to the accumulating face.

31. (Withdrawn) The powder processing apparatus according to claim 30, wherein the excitation treatment means is configured to irradiate discharge plasma to the processing target powder.

32. (Withdrawn) The powder processing apparatus according to claim 31,

further comprising magnetic field forming means for forming a magnetic field for delimiting an irradiation area of the discharge plasma onto the processing target powder.

33. (Withdrawn) The powder processing apparatus according to claim 30, wherein:

the accumulating face is formed in an inner face of a bottomed cylindrical container member;

the processing face is formed at a leading end of the processing member wherein the leading end projects from a side of a cylinder axis of the container member toward a side of the accumulating face; and

the moving means is configured to rotatably drive the container member about the cylinder axis thereof.

34. (Withdrawn) The powder processing apparatus according to claim 33, further comprising decompressing means configured to decompress the inside of a casing sealingly housing the container member and the processing member to a pressure below the atmospheric pressure.

35. (Withdrawn) The powder processing apparatus according to claim 34, further comprising gas supplying means configured to supply a predetermining processing gas to the inside of the casing sealingly housing the container member and the processing member.

36. (Withdrawn) The powder processing apparatus according to claim 30, further comprising oscillating means for oscillating the accumulating face and the processing face along a direction intersecting the accumulating face.

37. (Withdrawn) A powder processing apparatus comprising:

an accumulating face on which processing target powder is to be accumulated;

a processing face disposed substantially opposite to the accumulating face and convexly curved;

moving means for moving the accumulating face and the processing face

relative to each other along the accumulating face; and

oscillating means for oscillating the accumulating face or the processing face along a direction intersecting the accumulating face.

38. (Withdrawn) The powder processing apparatus according to claim 37, further comprising a crushing portion disposed rearwardly of the processing face relative to the direction of the relative movement of the processing face by said moving means and projecting more toward the accumulating face than the processing face.

39. (Withdrawn) The powder processing apparatus according to claim 37, wherein the oscillating means is configured to allow for adjustment of an oscillation frequency of the accumulating face or the processing face to adjust the magnitude of a shearing force to be applied to the processing target powder at a gap between the accumulating face and the processing face.

40. (Withdrawn) The powder processing apparatus according to claim 37, wherein

the accumulating face is formed in an inner face of a bottomed cylindrical container member;

the processing face is formed at a leading end of the processing member wherein the leading end projects from a side of a cylinder axis of the container member toward a side of the accumulating face;

the moving means is configured to rotatably drive the container member about the cylinder axis thereof; and

the oscillating means is configured to oscillate the processing member in a direction intersecting the accumulating face.

41. (Withdrawn) A method of manufacturing a porous granulated substance including a coagulation of a processing target powder and having a plurality of pores, comprising the steps of:

moving an accumulating face on which the processing target powder is to be accumulated and a processing face disposed substantially opposite to the accumulating face and convexly curved, relative to each other along the accumulating face; and

oscillating the accumulating face or said processing face along a direction

intersecting the accumulating face, whereby a compressive force is applied to the processing target powder at a gap formed between the accumulating face and the processing face.

42. (Withdrawn) The porous granulated substance manufacturing method according to claim 41, further comprising the step of moving a crushing portion together with the processing face relative to the accumulating face to crush the porous granulated substance accumulated on the accumulating face, wherein the crushing portion is disposed rearwardly of the processing face relative to the direction of the relative movement of the processing face and projecting more toward the accumulating face than the processing face.

43. (Withdrawn) The porous granulated substance manufacturing method according to claim 42, wherein the processing target powder constituting the porous granulated substance has an average particle diameter of 1 μm or less and the pores formed in the porous granulated substance have an average diameter of 100 nm or less.